Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

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April 10, 2014

Mr. Steven Aho, President
Select Engineering, Inc.
260 Lunenburg Street
Fitchburg, MA 01420

RE: Fitchburg
Transmittal No.: X257114
Application No.: CE-13-028
Class: *SM-50*
FMF No.: 132963
AIR QUALITY PLAN APPROVAL

Dear Mr. Aho:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of a new automated processing line at your electrode manufacturing facility located at 260 Lunenburg Street in Fitchburg, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

A. Facility Description

The Permittee operates a facility at 260 Lunenburg Street, Fitchburg, Massachusetts that manufactures high performance, disposable electrode sensors for use in the medical field. The Facility processes plastic pieces in the required shapes for electrodes. The pieces are tumbled to smooth them, chemically etched, bonded, silver plated, and chlorided. Various chemicals are used in these processes and have the potential to be emitted to the ambient air.

Chemical solvent contained in the chemical solvent tanks is emitted as Volatile Organic Compounds ("VOC"). The chemical solvent tanks currently in use at the Facility are collectively designated as Emission Unit ("EU") #2A. VOC vapors from EU #2A are captured and vented to a chilled condenser system. Condensed VOC solvent is collected and reused in the process.

Chemicals used in all of the other chemical tanks are in aqueous solution. All of these aqueous chemical tanks are collectively designated as EU #2B. The chemicals that have the potential to be emitted from EU #2B are hydrochloric acid, ammonia, and formaldehyde. Both hydrochloric acid and formaldehyde are classified as Hazardous Air Pollutants ("HAPs"). Emissions from EU #2B are relatively low and are vented to the ambient air without control.

B. Identification of Existing Plan Approvals and Relationship to This Plan Approval

Since 1995, MassDEP has issued several Plan Approvals to the Permittee. These different Plan Approvals dealt with changes in operation, increased production, and varying VOC emissions at the Facility. For most of the period from 1995 to 2007, the Facility was limited to 25 tons per year VOC emissions. The latest Plan Approval Transmittal #W148124 was issued January 18, 2008. Plan Approval Transmittal #W148124 for the first time required a VOC control system using a chilled condenser, and limited VOC emissions to 9 tons per year, significantly lower than under previous Plan Approvals.

C. Purpose of Application

On October 31, 2013, the Permittee submitted the present Application Transmittal No. X257114. This Application requests an increase in the VOC limit from 9 to 18 tons per year to accommodate increasing production, while still using condensers and re-using collected solvent. This Application proposes the installation of a new automated processing line (to operate alongside the existing automated line) and a new 3-condenser VOC control system to replace the previously approved single condenser control system. **This Plan Approval Transmittal No. X257114 supersedes the previous Plan Approval Transmittal No. W148124.**

D. Description of Proposed EUs

The new automated line will have VOC tanks (designated as EU #1A) followed by aqueous chemical tanks (designated as EU #1B). This will be the same basic layout as the existing

automated line, which is designated EU #2A (VOC tanks) and #2B (aqueous chemical tanks). EU #1A and #2A will vent to a common VOC exhaust leading to the new 3-condenser control system.

Under this Plan Approval, EU#1B and #2B are group emission units that include other aqueous chemical process tanks besides the aqueous chemical tanks that are on the two automated lines. The other aqueous tanks are located in other rooms. The chemicals and operations of those other aqueous chemical tanks are not proposed to be changed under this Plan Approval. The emission limits from Plan Approval Transmittal #W148124 of less than one ton per year of ammonia and less than one ton per year of total HAPs from EU #1B and #2B will remain the same under this Plan Approval.

E. Best Available Control Technology

The Application presents test data and calculations that indicate the present capture and control efficiencies of the existing VOC single condenser control system. The data shows the present capture efficiency is 90% and the condenser control efficiency is 88%, yielding an overall control efficiency of 79%. The Permittee anticipates that the new automated line will have a higher capture efficiency and that the new 3-condenser control system will have a higher control efficiency; however, these efficiencies cannot be determined with certainty prior to operation. MassDEP has determined that the current 90% capture and 88% control efficiencies represent the floor for Best Available Control Technology ("BACT") for this Application. MassDEP is issuing this Plan Approval allowing the Permittee to install the new condenser system and perform testing and modifications to improve the control efficiency for a 6-month time period after startup of the new condenser system. After this evaluation period the Permittee will submit an evaluation report indicating the achieved efficiencies and corresponding conditions of operation. Subsequently, MassDEP will amend the Approval to incorporate the conditions of operation, also called Standard Operating and Maintenance Procedures (SOMP).

F. Other Regulatory Requirements

The Facility is not subject to New Source Performance Standards (NSPS) under 40 CFR Part 60 or to National Emission Standards for Hazardous Air Pollutants (NESHAPS) under 40 CFR Part 63.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU#	**Description**	**Design Capacity**	**Pollution Control Device (PCD)**
1A	VOC tanks (new process line)	N/A	Condensers
2A	VOC tanks (existing process line)	N/A	Condensers
1B &2B	Aqueous chemical tanks (both on the new and existing process lines and in other rooms)	N/A	None

Table 1 Key:
EU# = Emission Unit Number
PCD = Pollution Control Device
VOC = Volatile Organic Compounds

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2			
EU#	**Operational / Production Limit**	**Air Contaminant**	**Emission Limit (Notes 2, 4 and 5)**
1A and 2A	None	VOC (Note 1)	3.6 TPM, 18 TPY (total of 1A and 2A) (Note 2)
1B and 2B	None	HAPs (Note 3)	<1.0 TPY, <0.2 TPM (Note 4)
		Ammonia	<1.0 TPY
Facility-Wide	None	VOC	3.6 TPM, 18 TPY
		HAPs	<1.0 TPY
		Ammonia	<1.0 TPY

Table 2 Notes:
1. EU #1A & 2A VOC shall not contain HAPs.
2. EU #1A & 2A VOC emissions shall be calculated by emission factors and mass balance as detailed in the Application.
3. EU #1B & 2B HAPs emissions consist of hydrochloric acid (HCl) and formaldehyde.
4. EU #1B & 2B HAPs and ammonia emissions shall be calculated by emission factors and formulas detailed in the Application.
5. The Permittee may make changes in emission calculation methods and/or emission factors following the issuance of this Approval, provided MassDEP approves the proposed changes in writing.

Table 2 Key:
EU# = Emission Unit Number
VOC = Volatile Organic Compounds
HAPs = total Hazardous Air Pollutants
lb/hr = pounds per hour
TPM = tons per month
TPY = tons per consecutive12-month period
< = less than

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3

EU#	Monitoring and Testing Requirements
1A & 2A	1. The Permittee shall monitor the amounts of chemical solvent used, reclaimed, sent to wastewater, and removed as waste to demonstrate compliance with VOC emissions limits noted in Table 2. Monitoring shall be performed no less frequently than on a monthly basis.
	2. The Permittee shall monitor the exhaust gas temperature for each condenser and the chiller system temperature continuously on a strip chart or data recorder.
	3. The Permittee shall conduct emission testing on these emission units and the new condenser control system within 6 months of startup of the new condenser control system. The purpose of this emission testing will be to establish: a. The Standard Operating and Maintenance Procedures (SOMP) that are most effective in reducing VOC emission rates. b. The actual VOC capture and control efficiencies, and hourly emission rates, that are achieved under the conditions of operation in accordance with the SOMP.
1B & 2B	4. For demonstrating compliance with HAPs and ammonia emission limits noted in Table 2, the Permittee may use the existing calculations as detailed in the application for this Plan Approval. If the concentration, temperature, or surface area of the baths change, the Permittee shall reevaluate the evaporative loss from the bath to demonstrate compliance with HAPs and ammonia emission limits noted in Table 2.
Facility-wide	5. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	6. If and when MassDEP requires it, the Permittee shall conduct additional emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

Table 3 Key:
EU# = Emission Unit Number
USEPA = United States Environmental Protection Agency
VOC = Volatile Organic Compounds
HAPs = total Hazardous Air Pollutants

Table 4

EU#	Record Keeping Requirements
1A & 2A	1. The Permittee shall maintain monthly and 12-month rolling logs of lots processed through each line.
	2. The Permittee shall maintain monthly records of the Table 3, condition 1. items necessary for VOC emission calculations.
	3. The Permittee shall maintain records of condenser and chiller temperatures.
1B & 2B	4. The Permittee shall maintain monthly records of the Table 3, condition 4. items necessary for HAPs and ammonia emissions calculations.
Facility-wide	5. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	6. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	7. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EUs and PCDs approved herein on-site.
	8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EUs, PCDs and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EUs and PCDs and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:
EU# = Emission Unit Number
PCD = Pollution Control Device
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency
VOC = Volatile Organic Compounds
HAPs = total Hazardous Air Pollutants

Table 5	
EU#	**Reporting Requirements**
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Central Regional Office of MassDEP, BWP Permit Chief by telephone: 508-767-2845, email: CERO.Air@massmail.state.ma.us or fax : 508-792-7621, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP's request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing as defined in Table 3, Monitoring and Testing Requirements.
	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing as defined in Table 3, Monitoring and Testing Requirement.

Table 5 Key:
EU# = Emission Unit Number

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with, the following special terms and conditions:

A. The Permittee is subject to and shall comply with the Special Terms and Conditions as contained in Table 6:

Table 6

EU#	Special Terms and Conditions
1A and 2A	1. The Permittee shall not begin to operate these lines until the condenser cooling media temperature is within normal operating parameters and the VOC tanks are vented to the condensers.
	2. During the initial evaluation period, the capture system shall collect at least 90% of the VOC and the control system shall achieve a minimum VOC removal efficiency of 88%.
	3. Following the evaluation period, and upon approval of the results of the emission testing specified in Table 3, condition 3., the Permittee shall operate the equipment to achieve the new approved VOC capture and control efficiencies established by the testing.
	4. All operators shall be trained in proper operation of the chillers system and the condenser(s). Proper operation includes observing the temperature of the cooling media in the chiller system prior to starting operations and the temperature of the condensers exhaust during operations.
	5. At least once per calendar year, the Permittee shall remove and calibrate the temperature probes/sensors for each condenser.
	6. Within thirty (30) days of completing the emission testing described in Table 3, condition 3., the Permittee shall submit to MassDEP, for approval, the updated SOMP for the Facility. The SOMP shall include, but is not limited to, the operating parameters established by the Permittee for the Facility, and the start-up and maintenance procedures for the condenser system. The Permittee shall operate the Facility in accordance with its SOMP. Future updates to the SOMP shall be submitted to MassDEP within thirty (30) days of said revisions. The updated SOMP shall supersede prior versions of the SOMP and shall include all equipment approved herein.
Facility-Wide	7. This Plan Approval Transmittal No. X257114 supersedes and replaces Plan Approval Transmittal No. W148124 in its entirety.

Table 6 Key:
EU# = Emission Unit Number
VOC = Volatile Organic Compounds
SOMP = Standard Operating and Maintenance Procedures

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.”

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (feet)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (°F)**
1A and 2A	35	0.5	20 to 50	-10 to +50

Table 7 Key:
EU# = Emission Unit Number
°F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Paul Dwiggins by telephone at 508-767-2760, or in writing at the letterhead address.

Roseanna E. Stanley
Acting Permit Chief
Bureau of Waste Prevention

Enclosure
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Fitchburg Fire Department kroy@fitchburgma.gov
MassDEP/Boston - Yi Tian
Lynn Sheridan, Capaccio Environmental